Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Cancelled).

Claim 2 (Previously Presented): The method of Claim 4, wherein compensating further comprises correcting data measured for one of a device under test and a signal under test using the test system.

Claim 3 (Previously Presented): The method of Claim 4, wherein the test system is one of a network analyzer and a spectrum analyzer.

Claim 4 (Previously Presented): A method of extending dynamic range of a test system that has a receiver channel comprising:

compensating for an effect that compression of the receiver channel has on a magnitude response and a phase response of the receiver channel,

wherein compensating comprises:

characterizing a first receiver channel of the test system for a first magnitude compression response and a first phase compression response;

characterizing a second receiver channel of the test system for a second magnitude compression response and a second phase compression response; and

compensating magnitude and phase data for the compression responses of each of the channels, the magnitude and phase data being measured by the first channel and the second channel.

Claim 5 (Original): The method of Claim 4, wherein characterizing the first receiver channel, characterizing the second receiver channel, and compensating data are performed sequentially at one or more of a plurality of different frequencies within a range of frequencies.

Claim 6 (Original): The method of Claim 5, wherein the compensation is interpolated so as to correct for the effect of compression on the magnitude and phase measurement data at frequencies other than those frequencies included in the plurality of different frequencies.

Claim 7 (Original): The method of Claim 4, wherein the first channel is characterized comprising:

using an input signal to drive the first channel into compression, the input signal having a plurality of power levels, at least one of the power levels driving the first channel into compression;

measuring the first magnitude compression response and the first phase compression response of the first channel; and

determining a magnitude compensation and a phase compensation for the first channel as a function of the plurality of power levels of the input signal.

Claim 8 (Original): The method of Claim 7, wherein the input signal is applied to the second channel, the second channel being non-compressed by the plurality of power levels, and wherein the first phase compression response is measured relative to the non-compressed second channel.

Claim 9 (Original): The method of Claim 7, wherein after determining the compensations, the second channel is characterized comprising:

using the input signal to drive the first channel and the second channel into compression, the input signal having the plurality of power levels, at least one of the power levels further driving the second channel into compression;

measuring the magnitude compression response and the phase compression response of the second channel, the phase compression response of the second channel being measured relative to the first channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the plurality of power levels using the determined magnitude compensation and the determined phase compensation of the first channel.

Claim 10 (Original): The method of Claim 7, wherein after determining the compensations, the second channel is characterized comprising:

using another input signal to drive the first channel and the second channel into compression, the input signal having another plurality of power levels, at least one of the power levels driving both channels into compression;

measuring the magnitude compression response of the first channel and the magnitude compression response and the phase compression response of the second channel, the phase compression response of the second channel being measured relative to the first channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the other plurality of power levels using the determined magnitude and phase compensations of the first channel and the measured magnitude compression response of the first channel.

Claim 11 (Original): The method of Claim 4, wherein the second channel is characterized comprising:

using an input signal to drive the second channel into compression, the input signal having a plurality of power levels, at least one of the power levels driving the second channel into compression;

measuring the second magnitude compression response and the second phase compression response of the second channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the plurality of power levels of the input signal.

Claim 12 (Original): The method of Claim 11, wherein the input signal is applied to the first channel, the first channel being non-compressed by the plurality of power levels, and wherein the phase compression response of the second channel is measured relative to the non-compressed first channel.

Claim 13 (Original): The method of Claim 7, wherein after determining the compensations, the second channel is characterized comprising:

using another input signal to drive the second channel into compression, the input signal having another plurality of power levels, at least one of the power levels driving the second channel into compression, the first channel being non-compressed;

measuring the second magnitude compression response and the second phase compression response of the second channel, the phase compression response of the second channel being measured relative to the first channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the plurality of power levels of the input signal.

Claim 14 (Original): The method of Claim 4, wherein characterizing the first receiver channel and characterizing the second receiver channel each comprises:

driving the receiver channel into compression, such that the channel has non-linear behavior; and

determining a deviation from linear behavior of the compressed receiver channel.

Claim 15 (Original): The method of claim 14, wherein driving and determining are repeated at a plurality of different frequencies.

Claim 16 (Original): A method of extending dynamic range of a test system comprising:

characterizing a reference receiver channel of the test system for a reference magnitude compression response and a reference phase compression response;

characterizing a second receiver channel of the test system for a second magnitude compression response and a second phase compression response; and

compensating for an effect that compression of one or both of the reference channel and the second channel has on measured magnitude data and measured phase data.

Claim 17 (Original): The method of Claim 16, wherein the reference channel is characterized comprising:

applying an input signal to an input of the reference channel and to an input of the second channel, the input signal having a plurality of different power levels,

wherein at least one of the power levels drives the reference channel into compression, while the second channel is non-compressed;

measuring the reference magnitude compression response and the reference phase compression response of the reference channel, the phase compression response being measured relative to the second channel; and

determining a magnitude compensation and a phase compensation for the reference channel as a function of the plurality of power levels of the input signal.

Claim 18 (Original): The method of Claim 16, wherein the second channel is characterized comprising:

applying another input signal to the input of the second channel and to the input of the reference channel, the other input signal having another plurality of power levels, wherein at least one of the power levels drives the second channel into compression;

measuring the second magnitude compression response and the second phase compression response of the second channel, the second phase compression response being measured relative to the reference channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the other plurality of power levels of the other input signal.

Claim 19 (Original): The method of Claim 17, further comprising attenuating the input signal before the input signal is applied to the second channel to achieve the second channel non-compression.

Claim 20 (Original): The method of Claim 19, wherein the second channel is characterized after the reference channel is characterized, comprising:

further applying the input signal to the input of the reference channel, and further applying the input signal without attenuation to the input of the second channel, wherein at least one of the power levels drives both the second channel and the reference channel into compression;

measuring the magnitude compression response and the phase compression response of the second channel, the phase compression response of the second channel being measured relative to the reference channel; and

determining a magnitude compensation and a phase compensation for the second channel as a function of the plurality of power levels using the determined magnitude compensation and the determined phase compensation of the first channel.

Claim 21 (Original): The method of Claim 16, wherein compensating comprises using magnitude compensations and phase compensations determined for the reference channel and the second channel to correct the measured data.

Claim 22 (Original): The method of Claim 21, wherein the measured magnitude data and the measured phase data are measured for one of a device under test and a signal under test using the reference channel and the second channel of the test system.

Claim 23 (Original): The method of Claim 16, wherein characterizing the reference channel and characterizing the second channel are performed periodically, while compensating is performed for each data measurement of one of a device under test and a signal under test.

Claim 24 (Original): The method of Claim 16, wherein the test system comprises more channels than the reference channel and the second channel, and wherein characterizing is performed sequentially for different pairs of channels in the test system.

Claim 25 (Original): The method of Claim 16, wherein the test system comprises a single receiver channel, one of the reference channel and the second channel being an implicit channel.

Claim 26 (Original): The method of Claim 16, wherein characterizing the reference receiver channel, characterizing the second receiver channel, and compensating are performed sequentially at one or more frequencies.

Claim 27 (Cancelled).

Claim 28 (Previously Presented): The test system of Claim 32, further comprising:

a power limiter connected to an input of the receiver channel, wherein the instructions implemented by the computer program further compensate for an effect on the generated data caused by the limiter being compressed.

Claim 29 (Previously Presented): The test system of Claim 32, wherein the test system is one of network analyzer and a spectrum analyzer.

Claim 30 (Previously Presented): A test system having extended dynamic range comprising:

a receiver channel;

a controller that processes magnitude data and phase data generated by the receiver channel;

a computer program stored in memory, the computer program being executed by the controller, the computer program implementing instructions that compensate for an effect on the generated data caused by the receiver channel being compressed;

another receiver channel; and

a signal source;

wherein the signal source generates a signal that is applied to the receiver channel, to an input of a device under test, and after passing through the device under test, to the other receiver channel, and wherein phase is measured as a phase difference between the receiver channels.

Claim 31 (Previously Presented): The test system of Claim 30, further comprising:

a power limiter connected to an input of the other receiver channel, wherein the instructions implemented by the computer program further compensate for an effect on the generated data caused by the limiter being compressed.

Claim 32 (Previously Presented): A test system having extended dynamic range comprising:

a receiver channel;

a controller that processes magnitude data and phase data generated by the receiver channel;

a computer program stored in memory, the computer program being executed by the controller, the computer program implementing instructions that compensate for an effect on the generated data caused by the receiver channel being compressed,

wherein the computer program further implements instructions that drive the receiver channel into compression, such that the channel has non-linear behavior; and that determine a deviation from linear behavior of the compressed receiver channel, the deviation being the effect on the generated data.

Claim 33 (New): The method of Claim 4, further comprising:

providing compensated magnitude data and compensated phase data as an output product of the test system.

Claim 34 (New): The method of Claim 16, further comprising:

storing results of characterizing the first receiver channel and of characterizing the second receiver channel,

wherein the stored results are used to produce compensated measured data during compensating for an effect.